REMARKS

The Office Action mailed September 14, 2010 has been reviewed and carefully considered. No new matter has been added.

Claims 1-33 are pending.

Claims 1-5, 11-21, and 27-33 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Publication No. 2002/0136297 to Shimada et al. (hereinafter "Shimada"). Claims 6-10 and 22-26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of U.S. Patent Publication No. 2006/0171454 to Jung (hereinafter "Jung"). The rejections are respectfully traversed.

The independent claims currently pending are Claims 1, 17, and 33.

It is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations recited in Claim 1: "means for generating a quantization parameter (QP) estimate for the macroblocks of an image frame; and means for selection of a frame level QP for the image frame, using one of mean, median, and mode of QP estimates for the macroblocks."

Moreover, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations recited in Claim 17: "generating a quantization parameter (QP) estimate for the macroblocks of an image frame; and selecting a frame level QP for the image frame, using one of mean, median, and mode of QP estimates for the macroblocks."

Further, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest the following limitations recited in Claim 33: "a quantizer for generating a quantization parameter (QP) estimate for the macroblocks of an image frame and for

selection of a frame level QP for the image frame, using one of mean, median, and mode of QP estimates for the macroblocks."

Against the aforementioned limitations of Claims 1, 17, and 33, the Examiner cited Shimada, reasoning as follows:

As per claim 1, Shimada discloses a video encoder for encoding image frames that are divisible into macroblocks, comprising: means for generating a quantization parameter (QP) estimate for the macroblocks of an image frame; and means for selection of a frame level QP for the image frame, using one of mean, median, and mode of QP estimates for the macroblocks (Figure 1 element 14; paragraph [0056] lines 1-6).

Paragraph [0056] of Shimada is reproduced in its entirety (inclusive of lines 1-6) as follows:

When setting the quantiser step size for each macroblock of a picture to be encoded, which is a second unit to be encoded, the encoding control unit 14 initially sets the target quantiser step size for the first macroblock to be encoded first in the current picture to the target quantiser step size set for the picture type of that picture. Each time the encoding unit 6 encodes the next macroblock, the encoding control unit 14 updates the quantiser step size to be used for encoding the next macroblock. The encoding control unit 14 further controls the updating so that the average of the quantiser step sizes used or to be used for encoding all macroblocks included in the current picture currently being encoded finally approaches the target quantiser step size set for the picture type of the current picture. By virtue of the control operation performed by the encoding control unit 14, the amount of codes generated when encoding each picture in the GOP can fall in a predetermined range with its target value for the amount of generated codes as the center of the predetermined range.

Thus, one difference between Claims 1, 17, and 33 and Shimada is that Claims 1, 17, and 33 involve quantization parameter estimates while Shimada involves quantizer step sizes. However, as is readily apparent to one of ordinary skill in the art, a quantization parameter estimate is not a quantizer step size. For example, a quantization parameter (or quantization parameter estimate) is a variable used to scale transform coefficient levels, while a quantizer step size is a difference between one quantization parameter and another quantization parameter. Hence, a quantizer step size is never (nor can be) used to scale a transform coefficient, as it is simply a difference measure from one quantization parameter to the next and not the actual variable used to perform the scaling. Thus, right at the onset, the cited portion of Shimada fails to teach or suggest the above reproduced limitations of Claims 1, 17, and 33.

Another difference between Claims 1, 17, and 33 and Shimada is that in Claims 1, 17, and 33, the frame level quantization level parameter for the frame is selected using one of mean, median, and mode of the quantization parameter estimates **for the macroblocks in that frame**, while in Shimada the quantizer step sizes are selected (controlled) using a target quantizer step size set **for the picture type for the current picture**. However, macroblocks in a frame do not correlate and/or otherwise necessarily correspond to picture type of the frame. Rather, macroblocks are sub-units of a picture, while picture type represents a type of encoding applied to a picture such as intra predictive coding or inter predictive coding. For example, a macroblock in the MPEG-4 AVC Standard represents a 16x16 block of luma samples and two corresponding blocks of chroma samples, while a picture type in the MPEG-4 AVC Standard may be, for example, I, P, or B, representative of an intra coded picture, a predictive coded picture, and a bi-predictive coded picture, respectively. Thus, as is readily evident to one of ordinary skill in the art, macroblocks in a frame do not correspond to the picture type for the frame. We further note that as per MPEG-4 AVC, a picture may be a frame or a field.

Hence, Shimada does not teach or suggest all the above reproduced limitations of Claims 1, 17, and 33. Moreover, we note that remaining reference Jung does not cure the deficiencies of Shimada, and is silent regarding the above reproduced limitations of Claims 1, 17, and 33.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP §2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The failure of an asserted combination to teach or suggest each and every feature of a claim remains fatal to an obviousness rejection under 35 U.S.C. § 103. Section 2143.03 of the MPEP requires the "consideration" of every claim feature in an obviousness determination. To render a claim unpatentable, however, the Office must do more than merely "consider" each and every feature for this claim. Instead, the asserted combination of the patents must also teach or suggest *each and every claim feature*. *See In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (emphasis added) (to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art). Indeed, as the Board of Patent Appeal and Interferences has recently confirmed, a proper obviousness determination requires that an Examiner make "a searching comparison of the claimed invention - *including all its limitations* - with the teaching of the prior art." *See In re Wada and Murph*y, Appeal 2007-3733, *citing In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original). "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious" (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

Since the Examiner has not shown all of the claimed elements to be taught, suggested, described, or otherwise disclosed in any combination of the cited references, a prima facie rejection has not properly been made.

Hence, Claims 1, 17, and 33 are patentably distinct and non-obvious over the cited references for at least the reasons set forth above.

Claims 2-16 and 18-32 directly or indirectly depend from Claims 1 and 17, respectively, and thus include all the limitations of Claims 1 and 17, respectively. Accordingly, Claims 2-16 and 18-32 are patentably distinct and non-obvious over the cited references for at least the reasons set forth above with respect to Claims 1 and 17, respectively.

Reconsideration of the rejections is respectfully requested.

In view of the foregoing, Applicants respectfully request that the rejections of the claims set forth in the Office Action of September 14, 2010 be withdrawn, that the pending claims be allowed, and that the case proceed to early issuance of Letters Patent in due course.

It is believed that no further additional fees or charges are currently due. However, in the event that any additional fees or charges are required at this time in connection with the application, they may be charged to applicants' Deposit Account No. 07-0832.

Respectfully submitted,

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